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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,427	01/17/2006	J. Donn Hethcock	0837RF-H552-US	5925

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EXAMINER	
AFTERGUT, JEFF H	

ART UNIT	PAPER NUMBER
1791	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/533,427	HETHCOCK ET AL.	
	Examiner	Art Unit	
	/Jeff H. Aftergut/	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-28 and 32-44* is/are pending in the application.

4a) Of the above claim(s) *27,28 and 32-44* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11-20-06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 22-26, drawn to a method of bonding two composite preforms together.

Group II, claim(s) 27, 28 32-34, drawn to a method of bonding two composite preforms together.

Group III, claim(s) 35-44, drawn to an apparatus for providing reinforcement in the z-direction for a composite preform.

2. The inventions listed as Groups I, II, and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The reference to Sidles anticipates the invention of Group I where the composite was formed by providing z-direction reinforcement in the performs and properly aligning such performs and cocuring the same subsequent to application of resin in the preforms.

3. During a telephone conversation with James Walton on 3-10-08 a provisional election was made with traverse to prosecute the invention of Group I, claims 22-26. Affirmation of this election must be made by applicant in replying to this Office action. Claims 27, 28, and 32-44 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102/103

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 22-26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sidles.

Sidles suggested that those skilled in the art would have bonded at least two composite performs together comprising providing at least two composite performs having composite fibers extending in an x-y plane, see plies 15 and 20 which included a base having warp and weft filaments 24 and 26. the reference taught that one skilled in the art would have inserted discrete fibers through each perform generally in a z-direction with loops protruding outward from each perform, see fibers 30 which extend in loops 32 and column 2, lines 20-24. the reference taught that those skilled in the art would have overlapped the exposed z-direction fibers and loops from one preform with the exposed z-direction fibers and loops of the other preform, see column 2, lines 45-59.

the reference taught that an organic binder was supplied to the performs and the organic binder formed a matrix upon application of heat and pressure to the assembly for the plies so arranged, see column 2, lines 60-column 3, line 4. the matrix is cured in the assembly, column 3, lines 66-column 4, line 1. It should be noted that while the reference depicted the cut fibers being integrated with the fibers of the loops in Figure 3, the reference taught that two fabric preforms both of which carried loops therein or loops as well as cut loops (tufts) would have been useful in the process, see column 30-45. In such situations, one skilled in the art would have understood that in order to be "cooperating" within the meaning of the term defined by the reference the fibers of the loops in one ply would have come into the vicinity of the loops of the other ply in accordance with the teachings of the reference. Additionally, the severing of the loops of fibers to form loops on one side and tufts on the opposed side would have resulted in discrete fibers being integrated into the base fabrics (and thus insertion of discrete fibers therein). While one may view this as an after step (and the insertion not being an insertion of discrete fibers but rather an insertion of continuous fiber which were made discrete subsequent to the inserting operation, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ discrete fibers which were inserted into each perform in order to form a perform useful for making a composite article having high interlamina strength as suggested by Sidles.

With respect to claims 23-26, the reference taught that the discrete fibers which were introduced into the base fabric as loops included glass fibers, carbon fibers (graphite) as well as polymer fibers, see column 3, lines 5-13. It should be noted that s-

glass is a well known and common form of glass fiber employed in composite manufacture and that one skilled in the art would have found it obvious at the time the invention was made to select s-glass from the available glass fibers to perform the inserting operation. It being noted here that the rejection of claim 24 is based solely upon obviousness (and not anticipation). The same is true for claim 25, where graphite is a form of carbon commonly used in composite manufacture. Certainly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select graphite as the fiber material in the manufacture of the composite perform in light of the known use of graphite as a carbon material in composite manufacture in light of the teachings of Sidles to employ carbon fibers.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Verpoest et al, Dow and Gotoh all teach the formation of fabric which include z-direction fibers which are assembled with the z-direction fibers interlocked with one another.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Jeff H. Aftergut/ whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:30-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff H. Aftergut/
Primary Examiner
Art Unit 1791

JHA
March 13, 2008